Operating instructions
KEMPER KHS-Service-Handy[1] Figure 686 03 003 for KEMPER KHS-Hygienic Flushing Unit Figure 686 03 007 and Figure 686 03 008

[1] designed by Geberit

Table of contents

General instructions P.2
Use as intended P.2
Function P.3
Quick reference guide Programming KEMPER KHS-Hygienic Flushing with Timer P.4
1. Operation P.6
1.1 Transmission of values LED signal P.6
1.2 Presets on the KHS-Service-Handy P.6
1.3 Querying and changing the settings P.6
1.4 Setting the flushing times P.7
1.5 Resetting all settings P.8
1.6 Resetting all individual settings P.8
2. Operating KEMPER hygienic flushings, UNIDIRECTIONAL P.9
3. Maintenance P.11
4. Disposal P.11
5. Selecting flushing times based on pipe diameter and line lengths P.12

General information

Target group and qualifications
These operating instructions are aimed at plumbers, trained service staff and technical staff.

Using the KHS-Service-Handy
These operating instructions include all the main information needed to use the KHS Service-Handy. Before starting work, read and stored these instructions and, if applicable, make them available to a trained specialist.

Storing the device
Store the device at a dry location at 5 - 40 °C. Do not lay it on a radiator or other heat source. Do not apply any pressure to the screen; doing so could damage it.

Contact with fluids
The KHS Service-Handy is not splashproof. If fluid penetrates into it, shut off immediately and remove the battery. Store the device for at least 72 hours with the battery compartment open in a dry, warm location and use only after that.

Terms

Term	Explanation
Control	Electronics in KEMPER products that can be operated with the KHS Service-Handy. HERE: KHS-hygienic flushing unit, internal controller
Sensor	The sensor is located in the control and radiates infrared light. It detects the user of a product and can be recognised by the dark plastic window.
Infrared	Infrared is a light source that is invisible for people, has no sound waves or similar.
Menu	The menu appears on the KHS Service-Handy screen. It contains all available menu items.
Menu item	Menu items are individual positions in the menu that represent a function or a value; they can be adjusted or read.
Menu type	Menu types differentiate the kind of control for a menu point.
Unidirectional	Infrared signals are sent from the Handy to the control; the control does not reply to the Handy. **The control mode to be selected for hygienic flushings Figure 686 03 007 and Figure 686 03 008**

Symbols

Points out important information.

Do not throw into domestic waste; dispose properly!

Warranty
The respective national legal warranty applies.

Use as intended

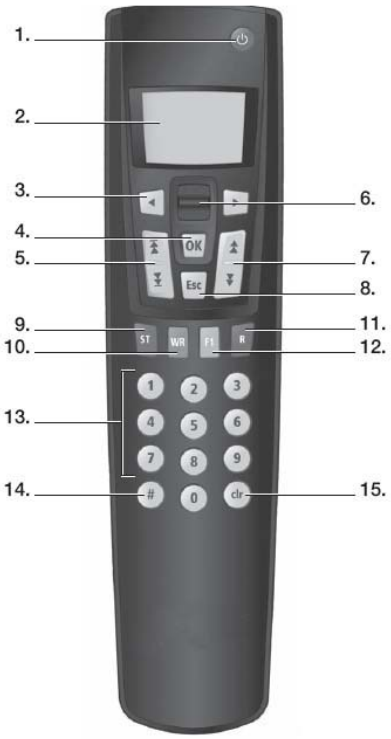
These operating instructions describe the use of unidirectional controls.
The KEMPER hygienic flushing is thus a unidirectional control.

The KEMPER KHS Service-Handy is used to set and query the adjustment values in the KEMPER hygienic flushing. Use other than as intended precludes all warranty terms and liability claims for personal harm or property damage.

Function

The KHS Service-Handy communicates through an infrared interface with the hygienic flushing control. It must be aimed at the sensor at a distance of 10 - 30 cm to be able to make adjustments. Do not swing the KHS-Service-Handy away from the target while operating. It could erroneously trigger an unwanted control command.

Controls



1 Switching on/ Switching off
2 Screen, menu display, menu items, etc.
3 Left/Right, moves within a selection
4 Acknowledge a selection/input
5 Navigation, moves to the begriming/ end of the menu list
6 Navigation, moves up/down one menu point
7 Navigation, moves up/down one page (4 menu items)
8 Exit a menu item
9 Starts the save menu
10 Write; writes the saved settings to a control
11 Reset
12 F1, no function
13 Write values, 0 - 9
14 Hash key, no function
15 Delete; deletes one character in the input line each time it is pressed

Menu item for navigation

Menu item	Description
- Commands	Goes to the first menu item, "Command"
- Program	Goes to the first menu item, "Program"
- Parameters	Goes to the first menu item, "Parameter"
- Counter	Goes to the first menu item, "Counter"
- Information	Goes to the first menu item, "Device info"

Screen standby mode

The screen darkens if no key is pressed for 2 minutes.
Pressing any key cancels this mode.

List of menu items

Only specialists are allowed to set the functions described here.
The menu items listed here can be individually set with the KHS Service-Handy. The numbers and terms in the "Menu Item" column correspond to the display on the KHS Service-Handy screen. The LED signals in the control sensor transmits the values.
For hygienic flushings, see "Hygienic Flushings" list

Quick reference guide Programming
KEMPER KHS-Hygienic Flushing with Timer
Cold water Figure 686 03 007
Cold and hot water Figure 686 03 008

Note:
A KHS-Service- Mobile Figure 686 03 003 is always required for commissioning!

1. Set the number of valves

Only required for cold water Figure 686 03 007!
For Figure 686 03 008, the factory settings of *Flush interval: 48 h / Flush duration 180 sec.* immediately active.

After the first time they are switched on, all cold-water hygienic flushes show in the display:

Err1 in alternation **48h**

That is not a system error! The board is factory delivered for hot and cold water (2 valves delivered and notices that only 1 valve is connected).

Take the following steps with the KHS-Service-Mobile
Factory settings subsequently active: *Flushing interval. 48 h / Flush duration 180 sec.*

Cold water Figure 686 03 007			
	Menu item / Designation	*Key press*	*Display*
1.		1 x switch-on key	Err1 / 48
2.	08 Unidirect	1x OK	Err1 / 48
3.	40 HygSpülng (Flushing)	1x OK	Err1 / 48
4.	00 ON/OFF	1x OK	_ SH _
5.	43 AnzVentil (Num. of valves)	1x OK	_ SH _
6.	43 AnzVentil OK? (Num. of valves OK?)	1x OK	_ SH _
7.	43 AnzVentil 1 2	1x ◄	2
8.	43 AnzVentil 1 2	1x OK	1
9.	00 ON/OFF	1x OK	48

2. Setting the flushing times

Factory setting: 180 sec.
Possible selection: 10 sec. – 999 sec.

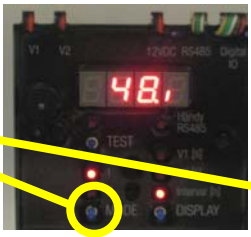
Cold water Figure 686 03 007			
	Menu item / Designation	*Key press*	*Display*
1.	00 ON/OFF	1x OK	48
2.	41 IntSpZ V2 (Int. flush time)	1x OK	_ SH _
3.	41 IntSpZ V2 OK? (Int. flush time)	1x OK	180
4.	41 IntSpZ V2 __ (Int. flush time)	1x e.g. 120	120
5.	41 IntSpZ V2 120 (Int. flush time)	1x OK	120
6.	00 ON/OFF	1x OK	48
Cold and hot water Figure 686 03 008			
	Menu item / Designation	*Key press*	*Display*
1.	00 ON/OFF	1x OK	48
2.	41 IntSpZ V2 (Int. flush time)	1x OK	_ SH _
3.	41 IntSpZ V2 OK? (Int. flush time)	1x OK	180
4.	41 IntSpZ V2 __ (Int. flush time)	1x e.g. 120	120
5.	41 IntSpZ V2 120 (Int. flush time)	1x OK	120
6.	40 IntSpZ V1	1x OK	120
7.	40 IntSpZ V1 OK? (Int. flush time)	1x OK	180
8.	40 IntSpZ V1 (Int. flush time)	1x e.g. 60	60
9.	40 IntSpZ V1 60	1x OK	60
10.	00 ON/OFF	1x OK	48

3. Switching the mode (only if required!)

Converting the mode on the board:
(Factory setting: 48 h)

Key press, board MODE
=
Change: Mode 1 / 2
Check: LED 1 / 2

Mode 1:
4 h – 72 h



Mode 2:
48 h – 336 h

4. Setting the flushing interval

Cold water Figure 686 03 007			
Cold and hot water Figure 686 03 008			
	Menu item / Designation	*Key press*	*Display*
1.	00 ON/OFF	1x OK	48
2.	42 Interval Z	1x OK	_ SH _
3.	42 Interval Z OK? (time)	1x OK	48
4.	42 Interval Z __ (time)	1x e.g. 24	24
5.	42 Interval Z 24 (time)	1x OK	24
6.	00 ON/OFF	1x OK	24

1. Operation

Before using the KHS Service-Handy for the first time, insert the batteries (see Point 3 P.9, Maintenance). The navigation button function is described in "Controls", (see Page 3) (e.g., buttons 1 to 15)

1.1 Output of values per LED signal
The control displays the saved values as an acknowledgment or for reading off. The values are transmitted through light pulses via the LED in the control sensor. Wait for the Service Handy to buzz, then start with counting.
Numerical values (Example)
LED flashes 7-times in a row (= Number 7)
Short break
LED flashes 3-times in a row (= Number 3)
Short break
LED flashes 6-times in a row (= Number 6)
The numerical value is 736.
The number "0" is indicated by the LED flashing briefly 3-times (Washbasin fittings:
1 brief flash of the LED).
ON/OFF
LED flashes 1-time = ON
LED briefly flashes 3-times = OFF

1.2 Presets on the KHS-Service-Handy
• [Buzzer]
Buzzing sound volume
• [Contrast]
Set the screen contrast
• [Version]
Read the software version of the Service-Handy
• [Language]
Change the menu language to English [EN]/German [DE]

1.2. (1) Switch on the KHS Service-Handy with Button 1; the display below appears

Display:
GEBERIT
00 Bidirect
08 Unidirect
Settings

1.2. (2) With Button 6 move to [Settings] and press "OK"

Display:
GEBERIT
Settings
00 Bidirect
08 Unidirect

1.2. (3) The display below appears. Now use Button 6 to select which settings you want to change. Use "OK" button to acknowledge each section. The selection has been made.

Display:
.0 Back
.1 Buzzer
.2 Contrast
.3 Version

1.2. (4) The desired settings have been made. With Button 6 move to [Back] and press "OK"
The following display appears:

Display:
GEBERIT
00 Bidirect
08 Unidirect
Settings

1.2. (5) Switch off the KHS Service-Handy with Button 1

1.3 Querying and changing the settings for commissioning the hygienic flushing

1.3. (1) Switch on the KHS Service-Handy outside of the control's coverage range,
The following display appears:

Display:
GEBERIT
00 Bidirect
08 Unidirect
Settings

Prerequisites
• Control is correctly installed and in operation

Press "Esc" to exit a menu item at any time.
If the contact is not exited after completion of operation, the control remains active for ten minutes until it independently aborts contact.
Always wait until the LED in the sensor stops flashing before making inputs.

1.3. (2) With Button 6, move to [Unidirect] and press "OK"

Display:
Unidirect
00 Back
10 Urinal
20 Valve

1.3. (3) With Button 40, move to hygienic flushing and press "OK". Aim the KHS Service-Handy at the control sensor at a distance of 10 - 30 cm, move to [ON/OFF] and press the "OK" button; in the hygienic flushing display appears:

Important: Changes in the settings can only be made in this state.

Display:
HygFlushing
00 ON/OFF
01 Back
02 Command

Functional check of the hygienic flushing for cold and / or warm water connections through manual triggering: Proceed as described in 1.3.(3) and go to [Command] with Button 6. There, go to 21 Valve 2 or 20 Valve 1 and acknowledge with "OK". Press "OK" depending on the valve channel:
- For cold water, open Valve 2:
  Cold water connection for Valve 2 opens
- For warm water, open Valve 1:
  Warm water connection for Valve 1 opens

If "OK" is pressed again, the flushing process stops.

1.3.(4) Making settings:
The menu items are listed by number.
(see Pages 7 and 8).

To reconfigure, e.g., the hygienic flushing of 2 valves (Factory setting) to 1 Valve, enter the inputs as below. Move to menu item (43) [AnzVentil] (number of valves) and press "OK"

Display:
42 IntervalZ
43 AnzVentil
OK?
50 SumBetrT?

1.3. (5) Press "OK"
and change the hygienic flushing of 2 valves (factory setting) with cursor button ► or ◄ , e.g. to 1 valve = **1**

Display:
42 IntervalZ
43 AnzVentil
1 2
50 SumBetrT?

then finish with "OK"

ATTENTION:
The steps up to this point are required to commission the cold water flushing (1 valve, e.g., Valve 2).

1.3. (6) After making the settings
Exit contact with the control. To do so, aim the Service-Handy at the control sensor, move with Button 6 to menu item [ON/OFF] and press "OK" until the hygienic flushing display shows the runtime until the next flushing

e.g. (180 hours)

Display:
HygFlushing
00 ON/OFF
01 Back
02 Command

If contact is not exited, the control remains inactive for ten minutes until it independently ends the contact.

1.3. (7) Switch off the KHS Service-Handy using Button 1

1.4. Setting the flushing times

1.4.1 to 1.4.5: See steps in 1.3.1 to 1.3.3

1.4. (4) The settings can now be made. The menu items are listed by number.
(see Pages 4 and 5).

Specify the flushing times in accordance with the tables on pages 10 and 11.

Set the hygienic flushing from the factory setting to the determined value. For cold water flushing, reset only Valve 2 to the determined value

In menu item (41), move to [IntSpZ V2] and press "OK"

Display:
40 IntSpZ V1
41 IntSpZ V2
OK?
42 IntervalZ

1.4. (5) Press "OK"
and enter the values, e.g., (180), with the numeric keys and finish with "OK".

Display:
40 IntSpZ V1
41 IntSpZ V2
42 IntervalZ
43 AnzVentil

Display on the hygienic flushing:

1.4. (6) After making the settings, exit the contact with the control. To do so, aim the Service-Handy at the control sensor, move to menu item [ON/OFF] and press "OK"; the hygienic flushing display shows the runtime until the next flushing

1.5 Resetting all settings

Resets all settings to the factory settings.

Prerequisites
• Control is correctly installed and in operation
• Contact with the control has been made; see "Querying and changing settings"

The command for resetting cannot be undone

1.5. (1) Use Button 6 to move to the [Factory Settings] menu item.

```
21 Valve 2
23 Factory Settings
30 Operating mode
40 IntSpZ V1
```

Press "OK". Number of menu point can be found in the control operating instructions.

1.5. (2) The display below appears

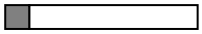
```
21 Valve 2
22 Factory Settings
R?
30 Operating mode
```

1.5. (3) Press Button "R"

```
22 ResetSens
23 Factory Settings
OK?
24   Cleaning
```

1.5. (4) Acknowledge with "OK". The reset command is sent to the control.

```
Aim at sensor!!
```



The following display appears if the transmission is finished

```
GEBERIT
00 Bidirect
08 Unidirect
Settings
```

Result
The settings are now set to the factory settings
.

1.6 Reset one individual setting

One individual setting is set to the factory setting.

Prerequisites
• Control is correctly installed and in operation
• Contact with the control has been made; see "Querying and changing settings"

The command for resetting cannot be undone.

1.6. (1) Move to the desired menu item and press "OK", in example [IntervalZ]

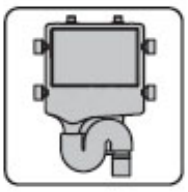
```
41 IntervSpZ
42 IntervalZ

43 AnzVentil
```

1.6. (2) Press Button "R" and acknowledge with "OK". The setting is reset to the factory setting. As an acknowledgement, a new value is issued in the sensor per LED signal.

Result
The setting is now reset to the factory setting.

2. Operating KEMPER hygienic flushings, UNIDIRECTIONAL



Menu item: Command

Menu item [DE]	Description	Application	Adjustment range	Factory setting
20 [Valve 1]	Switch Valve 1. Opens the valve and closes it again on command	a) Functional check of the valve b) Flushing out stagnant water (stagnation) c) Winter draining	On = "OK" Off = "OK"	Off
21 [Valve 2]	Switch Valve 2. Opens the valve and closes it again on command	a) Functional check of the valve b) Flushing out stagnant water (stagnation) c) Winter draining	On = "OK" Off = "OK"	Off
22 [Factory Setting]	Factory settings. Sets all settings to the factory settings.	Problems with the settings	Press R	is executed

Menu item: Program

Menu item [DE]	Description	Application	Adjustment range	Factory setting
30 [OpMode]	Select operating mode. Choose between frequent and seldom flushing interval (see Parameter 42)	Select a program by pressing the buttons (3)	Frequent = [1] 4-72 hours Seldom = [2] 48-336 hours	Frequent [1]

Menu item: Parameter

Menu item [DE]	Description	Application	Adjustment range	Factory setting
40 [IntSpZ V1]	Interval flushing - Set Flush Time V1.	-	10 - 999 seconds	180 seconds
41 [IntSpZ V2]	Set interval flushing - Flush Time V2 .	-	10 - 999 seconds	180 seconds
42 [IntervalZ]	Set interval time - flushing interval .	-	[1]: 4 - 72 hours [2]: 48 - 336 hours	[1]: OP mode frequent 48 hours [2]: OP mode seldom 168 hours
43 [NoValve]	Set the number of valves.	-	1 Valve = [1] 2 Valve = [2]	2 Valve [2]

Menu item: Counter

Menu item [DE]	Description	Issue
50 [SumBetrT?]	Number of operating days in total. Shows the number of operating days since commissioning.	Days
51 [SumIntSp1]	Number of interval flushings Valve 1 Total.	Flushings
52 [SumIntSp2]	Number of interval flushings Valve 2 Total.	Flushings
53 [Error V1]	Number of errors Valve 1 Total. Shows the number of errors since commissioning.	Fault
54 [Error V2]	Number of errors Valve 2 Total. Shows the number of errors since commissioning.	Fault

Menu item: Device info

Menu item [DE]	Description	Issue
60 [SWVersion]	Software version. Shows the software version of the control (e.g. [0312] = Version 3.12).	[...] XXZZ

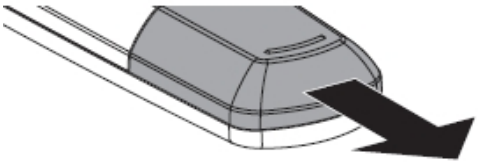
3. Maintenance

Insert or replace battery

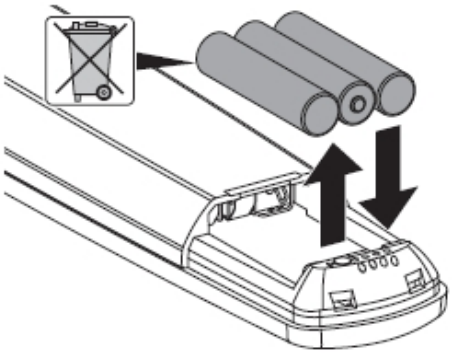
Prerequisites

• Three new batteries, type AAA, 1.5 V are available. (Batteries can be purchased in shops)

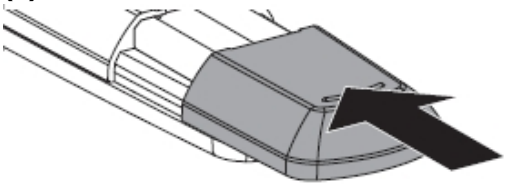
(1)



(2) Remove batteries and replace with new ones. Properly dispose used batteries



(3)



4. Disposal

Ingredients

This product conforms with the requirements in EU Directive 2002/95/
EEC RoHS (Restriction of Hazardous Substances).

Waste disposal

Based on EU Directive 2002/96/EC WEEE (Waste Electrical and Electronic Equipment), manufacturers of electrical devices are obligated to take back used devices and to properly dispose them. The symbol indicates that the product must not be disposed together with domestic waste. Return old devices directly to Kemper for proper disposal.

5. Selecting flushing times based on pipe diameter and line lengths

Table 1: Flushing time t (s) for Cu and stainless steel pipelines for cold and warm:

l (m)	t (s) d 15	d 18	d 22	d 28	d 35
5	6	8	13	21	33
6	7	10	15	26	40
7	8	12	18	30	47
8	9	13	20	34	54
9	10	15	23	39	60
10	11	17	25	43	67
11	12	18	28	47	74
12	13	20	30	51	80
13	14	22	33	56	87
14	15	23	35	60	94
15	17	25	38	64	100
20	22	33	50	86	134
25	28	42	63	107	167
30	33	50	75	129	201
35	39	59	88	150	234
40	44	67	101	171	268
45	50	75	113	193	301
50	55	84	126	214	335
55	61	92	138	236	368
60	66	100	151	257	402
70	77	117	176	300	469
80	88	134	201	343	536
90	99	151	226	386	603
100	111	176	251	429	670

Table 2: Flushing time t (s) for Geberit Mepla pipelines for cold and warm:

l (m)	t (s) d 16	d 20	d 26	d 32	d 40
5	4	7	13	22	36
6	5	9	16	27	43
7	6	10	18	31	50
8	7	12	21	35	57
9	8	13	24	40	64
10	9	15	26	44	71
11	10	16	29	49	78
12	10	18	31	53	85
13	11	19	34	57	93
14	12	21	37	62	100
15	13	22	39	66	107
20	17	29	52	88	142

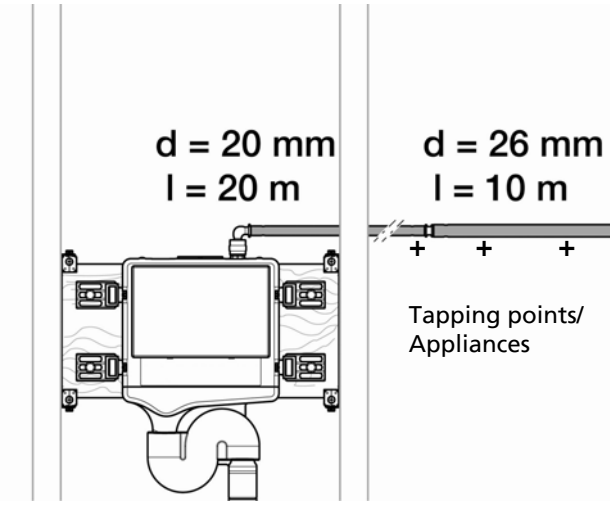
l (m)	t (s) d 16	d 20	d 26	d 32	d 40
25	22	37	65	111	178
30	26	44	79	133	214
35	30	52	92	155	249
40	35	59	105	177	385
45	39	66	118	199	321
50	43	74	131	221	356
55	48	81	144	243	392
60	52	88	157	265	427
70	61	103	183	310	499
80	69	118	209	354	570
90	78	132	236	389	641
100	87	147	262	442	712

Select the following sequence to set the flushing time and flushing interval:
1. Determine the flushing time
2. Set the flushing time and flushing interval with the KHS Service Handy as described in 1.4

The selected preset settings are retained even if the power supply is interrupted.

Example for determining the flushing time:
e.g. for a single feed line with various pipe diameters up to the riser line:

(5) (1) Determine the line length and dimension for cold water

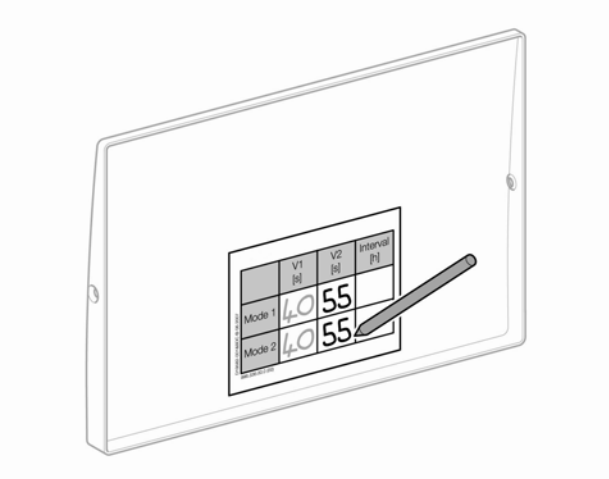


5. (2) Find the determined flushing times from Table 1 or Table 2 correspondent to the pipe system

5. (3) e.g. Flush Time V2 (cold water): 26s + 29s = 55s

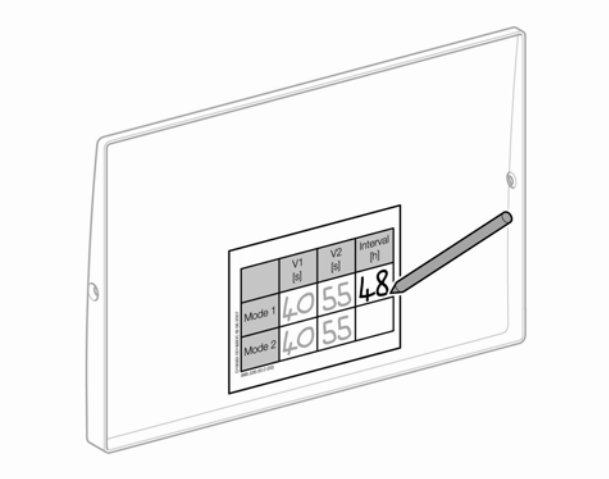
l (m)	t (s) d 16	d 20	d 26	d 32	d 40
5	4	7	13	22	36
6	5	9	16	27	43
7	6	10	18	31	50
8	7	12	21	35	57
9	8	13	24	40	64
10	9	15	26	44	71
11	10	16	29	49	78
12	10	18	31	53	85
13	11	19	34	57	93
14	12	21	37	62	100
15	13	22	39	66	107
20	17	29	52	88	142
25	22	37	65	111	178

5. (4) Note Flush Time V2 on the label on the back of the of the cover

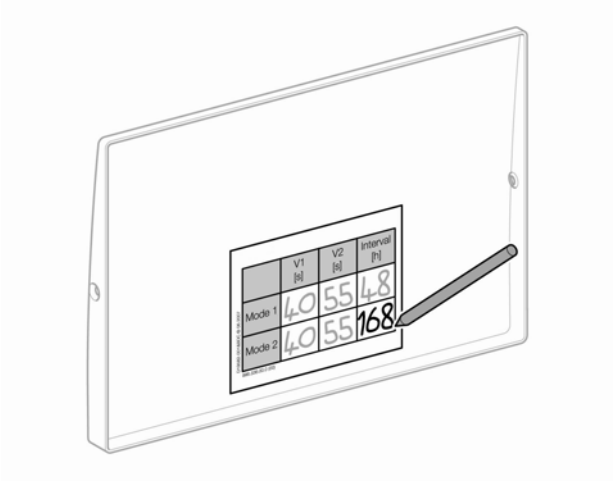


For WDW V1: Determine the flushing times for CDW V2 from Table 1 or 2 and write on the label under V1.

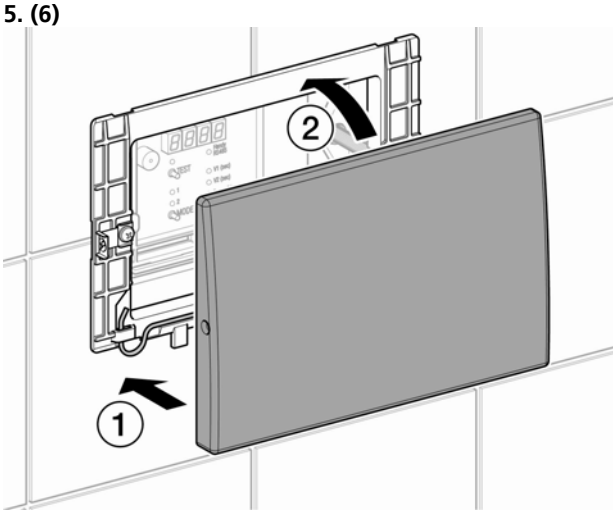
5. (5) In operating mode 1: Note the entered value for the flushing interval on the label on the back (e.g., every 2 days = 48 hours)



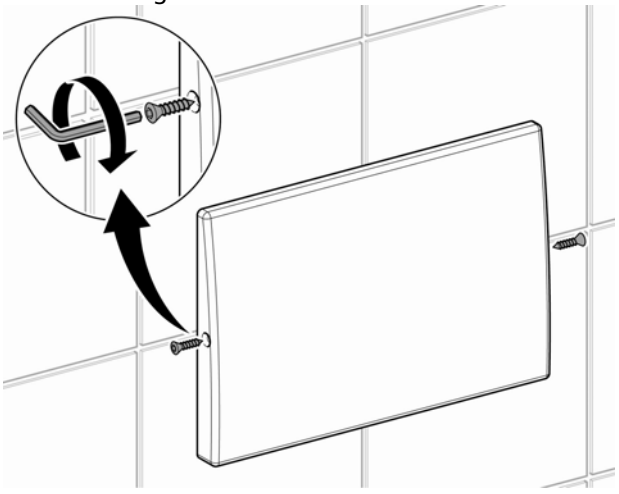
In operating mode 2: Note the entered value for the flushing interval on the label on the back (e.g., every 7 days = 168 hours)



Replace the cover
5. (6)



5. (7) Secure the cover against unauthorised activation:
Fixate both right and left Allen screws on the cover.



K410068603003-00 09/13
Technical subject to change.

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